

A PRACTICAL
PIANO TUNER

COMPILED BY
CHARLES E. MOSCOW

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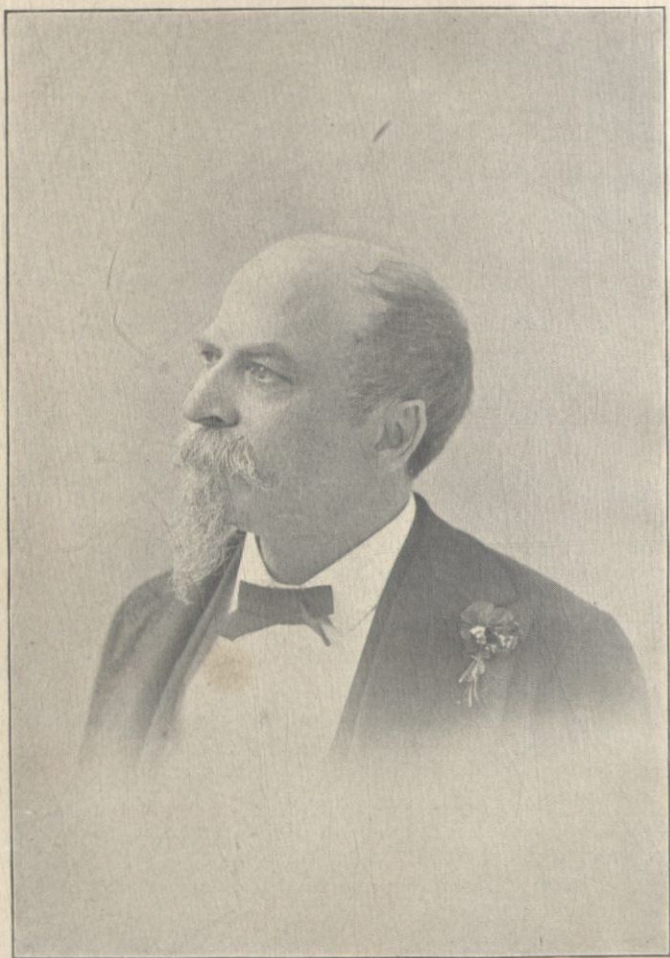
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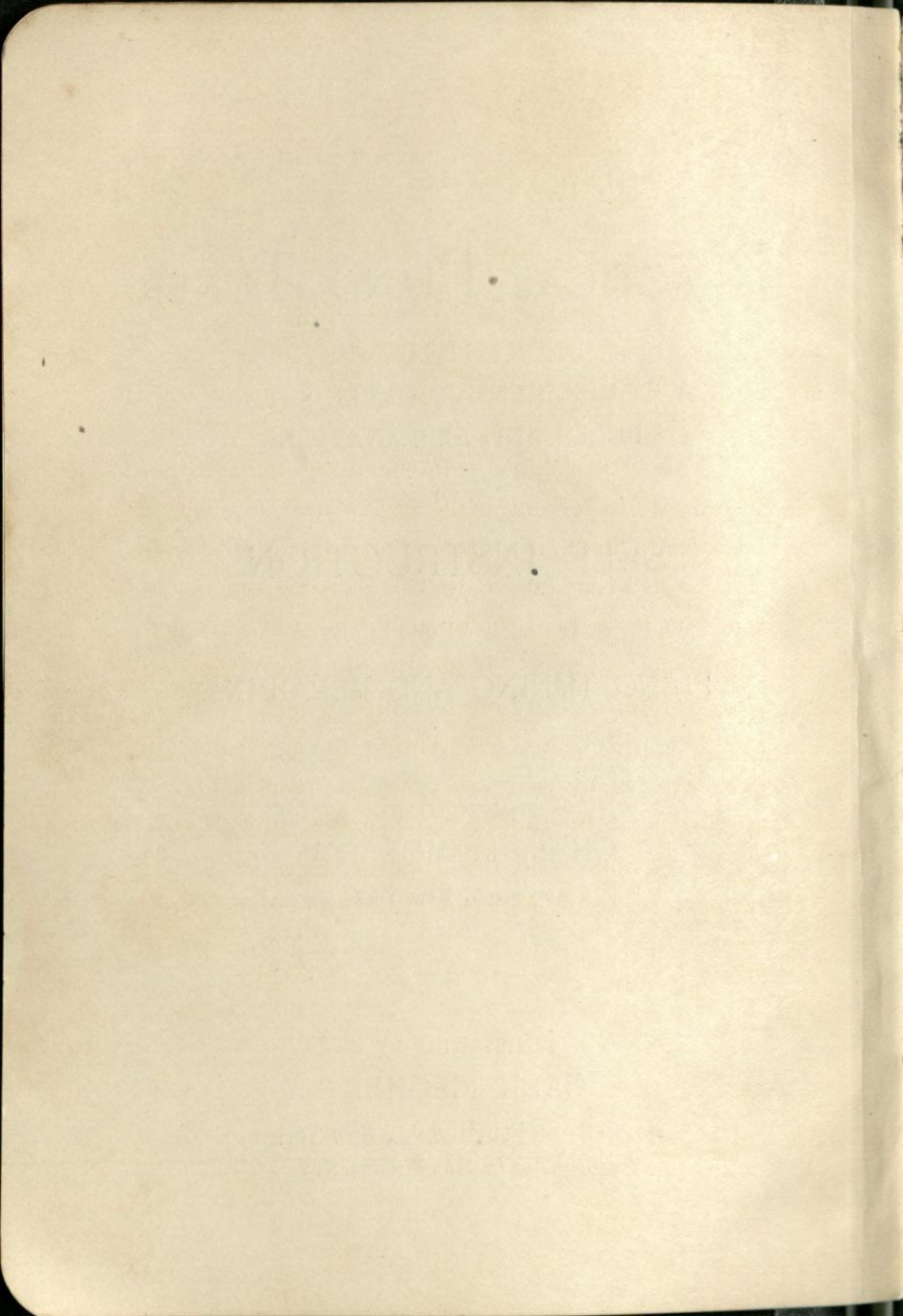
SELF INSTRUCTION

OF

PIANO TUNING AND REPAIRING

COMPILED BY
CHAS. E. MOSCOW
Newburgh, New York

PUBLISHED BY
CARL FISCHER
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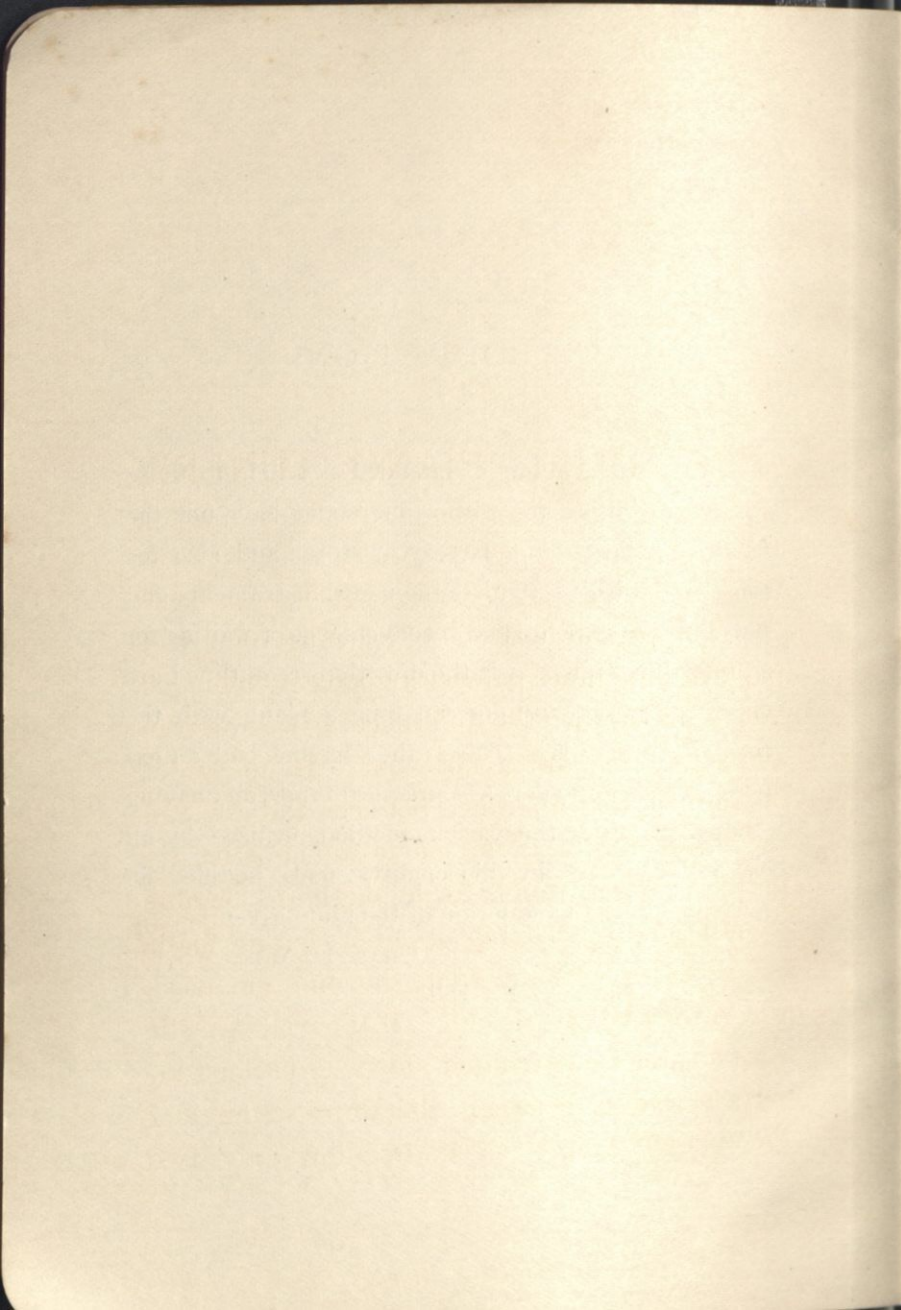


INTRODUCTION.

This little volume is intended as a help to those who desire to become piano tuners and have not the facilities to learn in a factory or store ; and also for those who wish to regulate their own instruments and thus save the expense and inconvenience of waiting for a professional tuner. If the directions as outlined are closely followed any one can tune a piano with the requisite precision. The Author having had an experience of many years as a practical tuner, and having studied carefully the various methods utilized by all classes of tuners in this country, feels justified in recommending the adoption of the hints given herein.

CHAS. E. MOSCOW.

NEWBURGH, N. Y., 1895.



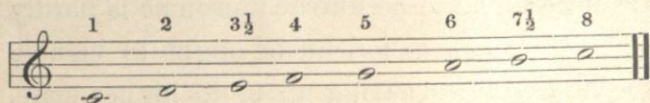
THE PRACTICAL PIANO TUNER.

The person desirous of learning the art of piano-tuning must possess a good ear to enable him to distinguish the difference between a true and clear tone and a false one. If he cannot distinguish the difference between the low and the high string of an untrue unison he is hardly fit to become a tuner, for he ought to be able to pull the lower string up to its higher mate, or *vice versa*, without going beyond the mark where they vibrate as one. If the trial is made with a three (3) stringed unison, you must insert a wedge between the third string and the following note, so as to allow only two

strings to be heard; then pull out the wedge and tune the third string in unison with the other two, and the three will sound as one if successfully tuned.

It is generally known among tuners that not one per cent of the professors of piano can tune their own instruments, whereas the maker or tuner, with little knowledge of music, will tune a piano perfectly. To become a tuner you must be familiar with the keyboard of the piano, scales, intervals, and accords.

A scale consists of seven intervals, the minor or short interval being between the 3d and 4th, and 7th and 8th, or octave, of the scale.

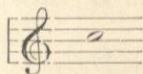


From C, 1, to D, 2, is called a second; to E, a third; to F, a fourth, etc. From C to E is a major, or full third; but from C to E flat is a minor third. A major third consists of two full

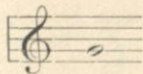
tones; a minor third, of one and a half tones. The intervals are found mechanically by counting the keys. Between a minor third there are only two keys, but between a major, three, etc.

TEMPERAMENT.

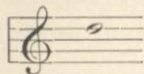
The laying of the temperament is the foundation of tuning. There are a great many ways used, but I find the following the best. My method of laying the temperament is to commence with C in the middle of the keyboard



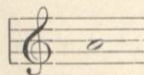
to your tuning fork, and using the wedge between C and C sharp to keep the other unison of C from vibrating, then tune the other one or two strings which form the unison of C perfect with the first string; next tune G



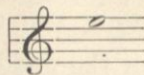
perfect without any sound waves or vibrations being noticeable; then D



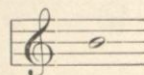
a trifle flat, hearing about three waves a second; next A



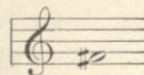
perfect; next E



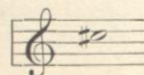
a trifle flat, same as D; next B



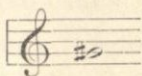
perfect; next F sharp



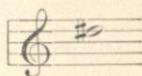
perfect; next C sharp



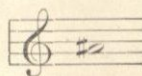
a trifle flat; next G sharp



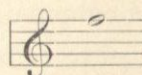
perfect; next D sharp



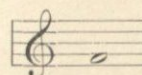
a trifle flat; next A sharp



perfect; then F



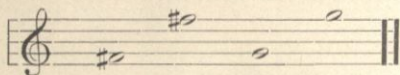
about three waves flat; then the octave F



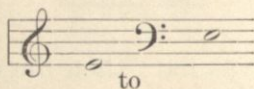
perfect. If you try your last F with the first note C, and find it corresponding with the other fifths, viz., about three waves

flat, then you have been successful; but don't feel discouraged if your first, second, or even tenth trial should not suit you. Stick to trying, and then try, try again; success will surely be your reward if courage, temper, and perseverance hold out.

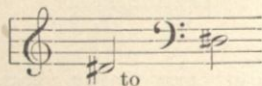
Now tune your octaves beginning with F sharp, and so on



I always tune the upper or treble first after setting my temperament. After tuning the treble, tune the bass commencing with E



D sharp



etc. The extreme bass strings can be tuned best by the harmonic, which is obtained by

placing a finger on the middle of the string (very lightly), producing the octave above or a unison with the string you are pitching from. Should the tone not be very clear or distinct, wedge one of the upper strings near the striking point, and if that should not prove satisfactory try the mate.

If you should find a false string, which is easily ascertained by being unable to obtain a perfect unison or octave, constantly hearing a *wow wow* or false vibration, wedge the false one and obtain the correct tone from its mate and replace it with a new string; or if not too old, take the tuning pin out and give the string a half or whole twist which sometimes (but not always) cures the defect. The surest plan is to put in a new string.

SYMPATHETIC VIBRATIONS, OR RATTLINGS.

Searching for a rattle or buzzing noise in a piano is sometimes very tedious. If the noise or rattle is perceptible by sounding any key on the piano then you may rest assured that the

mischief-maker is in the piano itself, which very often requires a long search to discover. To find the cause of the rattle take a turkey wing feather and sweep the sounding-board if it be a square or grand piano. Sometimes you will find that the trouble is caused by a pin, a peanut shell, a shot or two, pieces of glass, a piece of lead pencil, or any small substance. If a certain note only rattles, examine that string and all its octaves, for sometimes a drop of glue may have been spilt on the string and when dry will form a loose bugle around the string causing the rattle. Often the sounding-board will be found to be cracked, which would cause the trouble. If the sounding-board is warped the soft pedal will touch the strings, and then a rattle will be produced. A loose castor, hinge, or lock on the piano, a loose pane of glass in a picture frame or window, a loose globe on a chandelier, even a loose door knob or key will sometimes cause sympathetic vibrations. In fact, there are so many causes that the only advice I can give is to examine every-

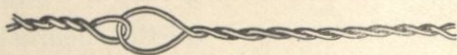
thing in the room. When a key clicks the cause is generally found to be in the action, there being either a loose hammer, shank, or screw connected with the action.

With the upright piano it is quite different. Should you hear a buzzing, ascertain whether the string has been jarred away from the hitch or bridge-pin. Sometimes the instrument stands on three castors only, and the fourth one, being *ad libitum*, causes the mischief. Examine all the screws in the action and, in fact, everything that common sense would teach you to cause a rattle, including outside causes for sympathetic vibrations.

BREAKING OF STRINGS.

If you should break a bass or wound string send the broken one to the nearest string winder, who will send you a new one for twenty-five cents. Should the string have been broken and lost, take a strip of paper the length of the next or unison string, and impress

the hitch-pin, bridge-pin, and agraffe on it; also give the size of core of the companion or next string and mention what make piano. Another method is to take a piece of chord, (fish line is the best because it will not stretch,) make a loop, hitch it on the hitch-pin, tie a knot at the beginning of the winding and another at the ending, mention size of wire by piano wire gauge, send it to the string winder with the required postage stamps or postal note, and it will be replaced by a new one. Should it be necessary to repair the old one at once, a splice can be made by twisting a loop on the broken end and inserting a piece of No. 21, 22, or 23 wire in the loop, and also twisting a loop in the new wire. The following cut of the twist will explain how it should be done.



Should you twist one around the other like Fig. II. it will surely pull out



This splice cannot be made on a piano with the agraffe, or where the broken string is not long enough to pass the bridge-pin singly without touching the winding.

Experience has taught me that by letting the bass strings down a trifle before tuning them up to the proper pitch they are less liable to break, especially on those pianos used at or near the seashore where the strings get coated with rust.

REPAIRS.

To repair the mechanical part the novice had better ask the advice of some experienced tuner before removing the action from the piano to the dissecting table; but should he undertake it let him be careful (if a square or a grand) not to touch the keys while moving the keyboard, and be sure to see that no hammer is up, or broken shanks will be the consequence. To take the action out of some of the old style square and grand pianos is very often a puzzle, not alone to the beginner, but also to

the tuner who has only done factory and new work.

To get at the keyboard, if the key strip does not lift up, the novice must examine the frame underneath, and he may find three or four screws which can be extracted either with a screw driver or a T hammer; should that not be the fastening point he may find a button which holds the name board in place; and on very old pianos the fastening will be found under the keys. By lifting up the name board each key under which there is a screw is generally marked. In all grand pianos the action is held in place by screws running in the key strip and sometimes held by soft pedal trap. The action in an upright piano can be removed by turning a couple of buttons, one at each end of the bracket, disconnect screws, give a gentle pull towards you, and lift out of place. Some upright actions are fastened the same as the square, viz., by removing key strip (which is either fastened by screws underneath or dowel in action front) when screws become visible.

Their action slides out with keyboard. If any portion of the action is loose the piano is sure to rattle; for that reason the tuner should be careful and give each screw a trial and fasten if loose.

HAMMERS AND FELT.

If a hammer strikes the wrong string and is caused by a twisted hammer shank, wet shank and hold a lighted match near enough to warm the wood, then hold it in shape till cool. If the hammer clicks, see if it is loose at the shank, or if a screw is loose at the hammer, butt, or flange.

If deep ridges are worn in hammer, use a sand file and file from side up to top until a new surface is produced, always filing with grain of felt.

If you wish to soften the tone, use the felt-pick. Do not pick hammers covered with leather.

If the felt on the hammers has spread, or become too soft, put a piece of cotton flannel

over the felt and iron with a small flat-iron, which will bring it back to the original shape; if a leather hammer, pinch it in shape with a pair of pliers. Care should be taken not to loosen the glue; always hold the hammer tight in one hand while using the pick or pincher with the other.

THE TUNER'S OUTFIT.

A tuner's kit should consist of at least a T hammer, large size, one Extension hammer with star tips, and if possible, one extra large tip. (Some of the Boston firms manufacture a piano which has about one octave of extra large pins in the bass.)

One felt wedge for square and grand piano, (never use rubber);

One or more long wedges for upright pianos;

One music wire gauge;

One pair of cutting-nippers or pliers;

One T hammer with reverse screw for extracting broken pins;

One slender 6 or 6 1-2 inch screw driver for action work;

One heavy 7 or 7 1-2 inch screw driver.

One patent ratchet screw driver for hidden screws;

Tuning forks (C or A) high and low pitch;*

One string lifter;

One felt pick;

One piece of black lead;

A few coils of wire ranging from No. 11 to 23 (use nothing but the best);

A few pieces of hammer leather, bushing cloth, hammer shanks, and other portions of action; also a few turkey feathers for cleaning sounding board.

REPOLISHING.

Fish-oil is the best article to take the film or white smoke off of a new piano. A few drops on a piece of cotton flannel will put a polish on as good as new if rubbed with a dry cloth

* Old or High Pitch A 455 vibrations. C 540=3 vibrations.
New or Low Pitch A 435 vibrations. C 517=2 vibrations.

at finish. Fish-oil can be procured at the supply store.

A good substitute is made as follows:

Benzine, 1 pint;

Muriatic acid, 1-2 oz.;

Turpentine, 1 oz.

Raw Linseed oil, 1-2 pint.

Dampen a piece of cotton flannel with water and apply a few drops of the above on cloth, using plenty of friction in polishing.

GLUE.

The most reliable glue is the best cabinet glue boiled in a regular glue-pot, but in case of necessity I carry a small case of "Le Page" Liquid Glue as a substitute.

To patch dents or holes in case use stick shellac (which you can also get from the supply store). Hold the stick over a spirit lamp, allowing the hot shellac to drop in the injury, press even with fingers, heat an old knife blade or a piece of corset steel, and smooth repairs. A flat file and a little pumice will prepare it for

the application of a coat of black varnish, after which finish with a layer of French polish.

French polish or varnish:

2 oz. of Sandarac;

1-2 oz. of Mastie;

1 pint Alcohol.

When dissolved add 5 drops of glycerine.

HOW TO TAKE CARE OF A PIANO.

When not in use the piano should be closed. Avoid placing a piano in a damp room, or against an outside wall. When the latter cannot be avoided there should be a space between the wall and piano. Should the piano be idle for any length of time lift the cover and let fresh air circulate through it once a week. It is best to select a sunny day. Place a piece of camphor in each end of the piano to keep it free from moth flies. Never place a piano too near a stove, register, or radiator. A new piano should be tuned at least four times a year for the first two or three years and as often as three times thereafter.

TO TEMPER TOOLS.

To temper a screw driver, heat it to a cherry red and then stick it in a piece of sealing wax or beeswax.

Any information you may desire about the repairs of any particular piano I advise to correspond direct with the manufacturer, who for his own interest will give you all the information necessary.

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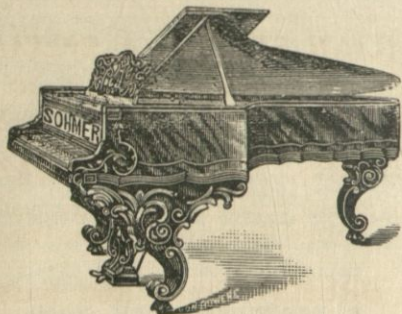
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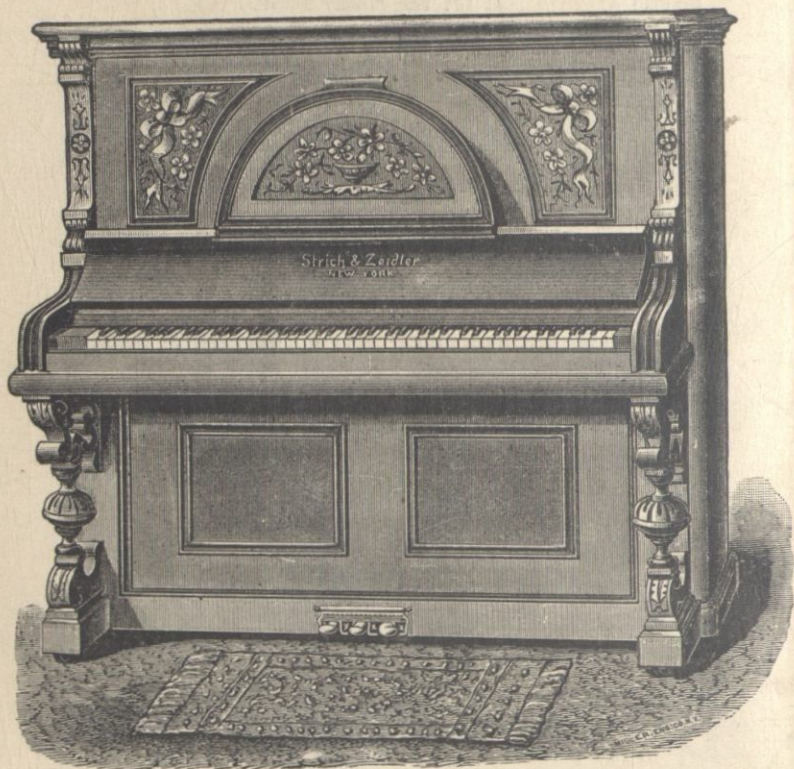
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